
Science Flight Report

Operation IceBridge Arctic 2012



Flight: F22 - Aborted

Mission: Helheim-Kangerdlugssuaq - Aborted

Flight Report Summary

| | |
|----------------------------|---|
| Aircraft | P-3B (N426NA) |
| Flight Number | 23 |
| Flight Request | 12P006 |
| Date | Tuesday, April 17, 2012 (Z) |
| Purpose of Flight | Operation IceBridge Mission Helheim-Kangerdlugssuaq |
| Take off time | 10:18 Zulu from Kangerlussuaq (BGSF) |
| Landing time | 11:17 Zulu at Kangerlussuaq (BGSF) |
| Flight Hours | N/A – not charged to project |
| Aircraft Status | Airworthy. |
| Sensor Status | All installed sensors operational. |
| Significant Issues | Aborted mission after takeoff due to issue with aircraft. |
| Accomplishments | No science data collection on this mission. |
| Geographic Keywords | Helheim and Kangerdlugssuaq Glaciers |
| Satellite Tracks | None |
| Repeat Mission | None |

Science Data Report Summary

| Instrument | Instrument Operational | | | Data Volume | Instrument Issues |
|--------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|-------------------|
| | Survey Area | Entire Flight | High-alt. Transit | | |
| ATM | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| MCoRDS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| Snow Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| Ku-band Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| Accumulation Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| DMS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| KT-19 Skin Temp. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| Gravimeter | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |
| Magnetometer | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | N/A | N/A |

Mission Report (Michael Studinger, Mission Scientist)

This mission was aborted shortly after takeoff due to an issue with the aircraft. No science data was collected.

Individual instrument reports from experimenters on board the aircraft:

ATM: N/A

MCoRDS: N/A

Snow and Ku-band radar: N/A

Accumulation radar: N/A

Gravimeter: N/A

Magnetometer: N/A

DMS: N/A

KT-19 skin temperature sensor: N/A

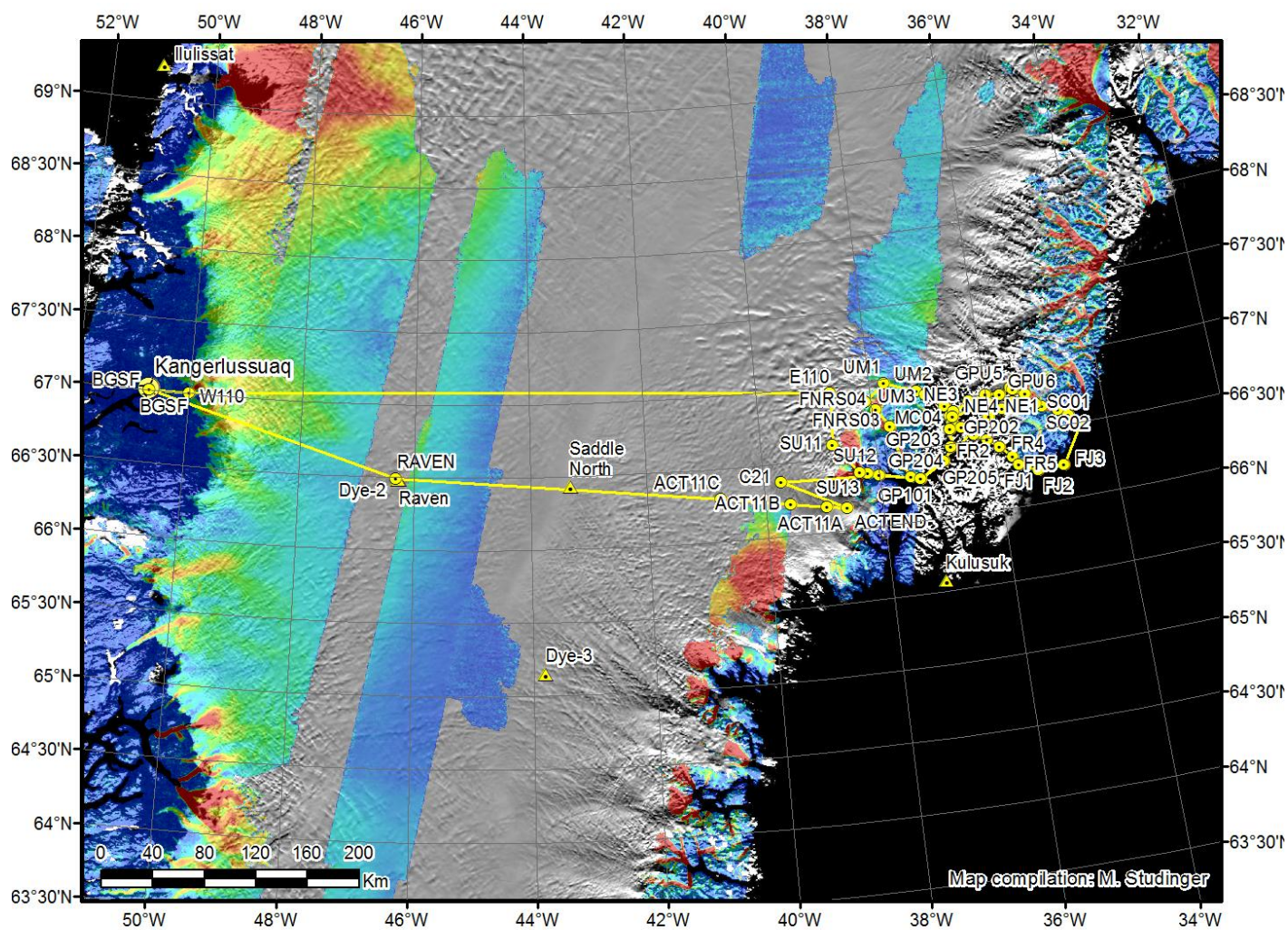


Figure 1: Today's mission plan (yellow). The mission was aborted shortly after takeoff and no science data collected.

Science Flight Report

Operation IceBridge Arctic 2012



Flight: F23

Mission: Helheim-Kangerdlugssuaq/South

Flight Report Summary

| | |
|----------------------------|--|
| Aircraft | P-3B (N426NA) |
| Flight Number | 24 |
| Flight Request | 12P006 |
| Date | Tuesday, April 17, 2012 (Z) |
| Purpose of Flight | Operation IceBridge Mission Helheim-Kangerdlugssuaq |
| Take off time | 13:23 Zulu from Kangerlussuaq (BGSF) |
| Landing time | 17:53 Zulu at Kangerlussuaq (BGSF) |
| Flight Hours | 4.5 hours |
| Aircraft Status | Airworthy. |
| Sensor Status | All installed sensors operational. |
| Significant Issues | None. |
| Accomplishments | <ul style="list-style-type: none">• Low-altitude survey (1,500) of glaciers and ice sheet profiles.• ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.• Pitch and roll maneuvers for snow and Ku-band radar.• Ramp pass at 2,000 ft AGL at Kangerlussuaq. |
| Geographic Keywords | Helheim and Kangerdlugssuaq Glaciers |
| Satellite Tracks | None |
| Repeat Mission | None |

Science Data Report Summary

| Instrument | Instrument Operational | | | Data Volume | Instrument Issues |
|--------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|-------------------|
| | Survey Area | Entire Flight | High-alt. Transit | | |
| ATM | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 40 GB | None |
| MCoRDS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 1.2 TB | None |
| Snow Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 410 GB | None |
| Ku-band Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 410 GB | None |
| Accumulation Radar | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 100 GB | None |
| DMS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 55 GB | None |
| KT-19 Skin Temp. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 5.6 MB | None |
| Gravimeter | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 1.5 GB | None |
| Magnetometer | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 310 MB | None |

Mission Report (Michael Studinger, Mission Scientist)

This is a new mission, based on the 2010 “Hel-Kang” mission but with considerable changes. It captures centerline surveys of the two main branches of Helheim, of Kangerdlugssuaq, Fenris and of several branches of Midgard glaciers. It also overflies the 2011 Forster traverse from Raven to the southeastern coast. We had to shorten the original mission plan because of several issues in the morning including an aborted flight, but were able to collect a good amount of data.

Thanks to the high pressure ridge along the northeast coast of Greenland, the weather was great as expected. We only lost 5% of ATM data because of ice fog. We collected 4.0 hours of science data.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in cloud free conditions. ATM collected a total of 4.0 hours of science data with 95% coverage. 5% of data was lost because of ice fog.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars worked well on the primary system.

Accumulation radar: Worked well today and collected 10 + 5 minutes of tomography test data on the transits.

Gravimeter: Worked well.

Magnetometer: Worked well and used the SGL data logger today without problems.

DMS: DMS worked well.

KT-19 skin temperature sensor: System worked well.

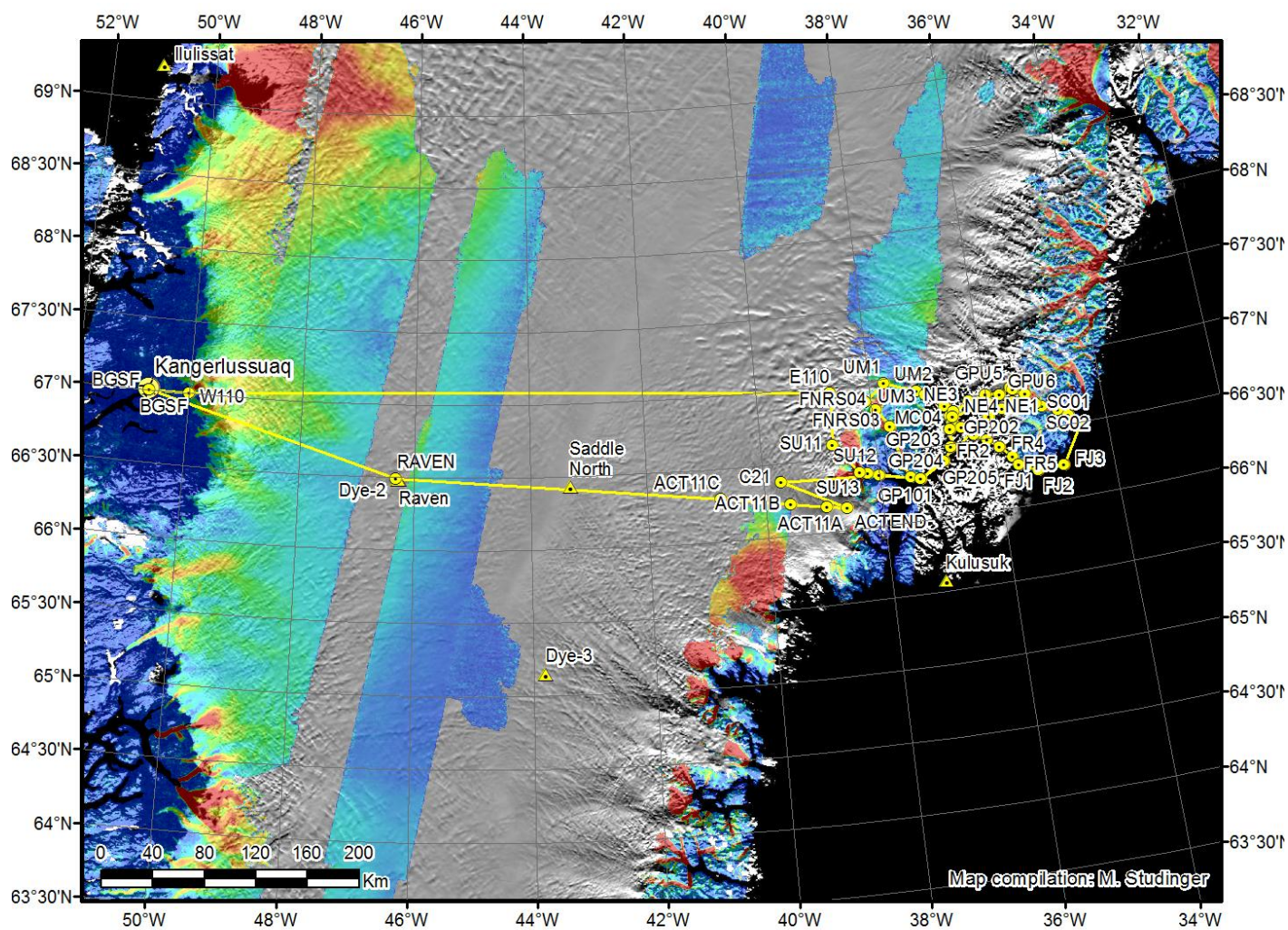


Figure 1: Today's mission plan (yellow).

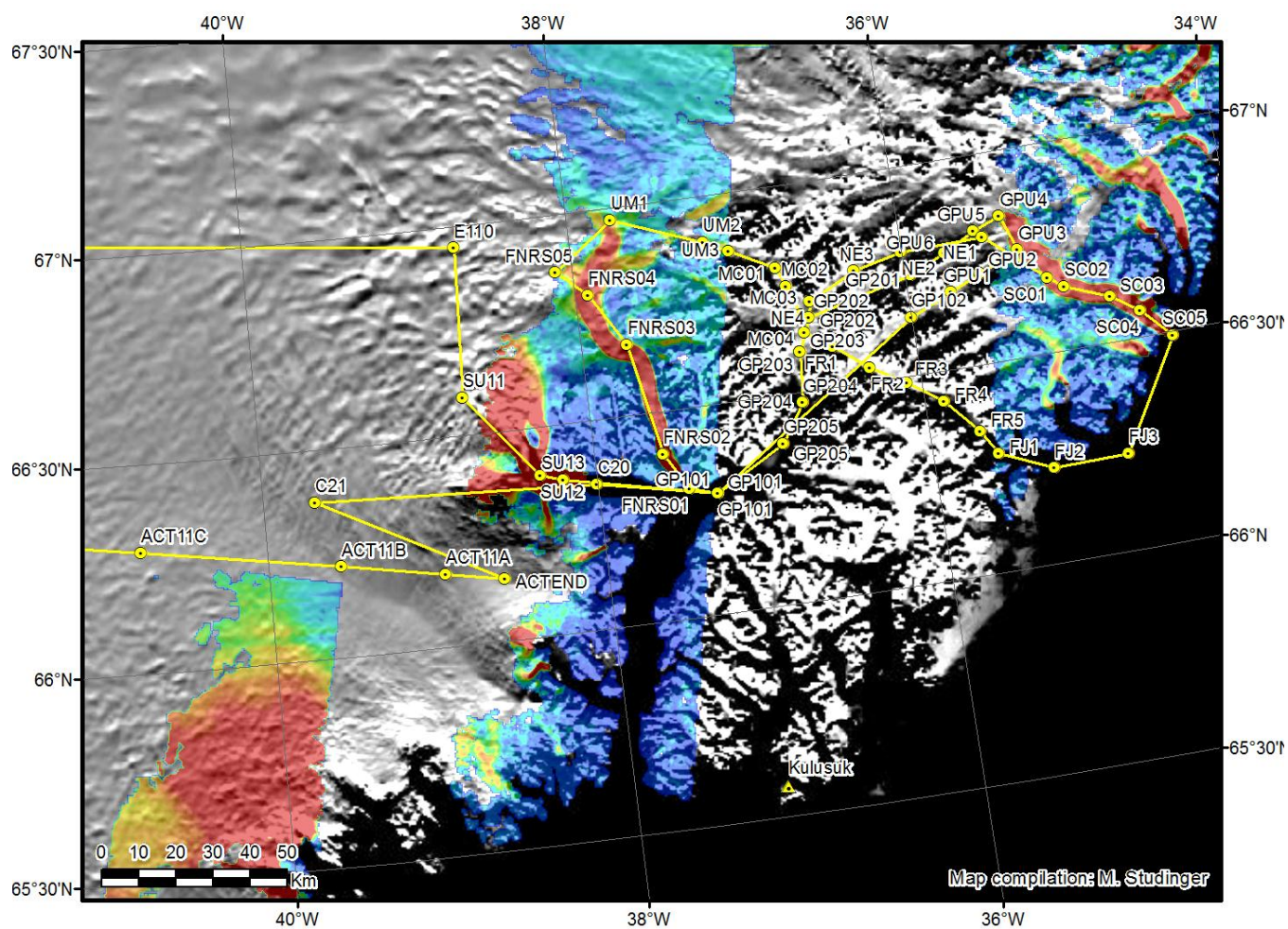


Figure 2: Shortened mission profile.